REMARKS

Claims 1-8 are pending in this application.

Objection to the Abstract

The Abstract was objected to for being in improper form. The Abstract has been amended by this response to be a single paragraph and it is respectfully submitted that the Abstract is in proper form as required by the U.S. Patent and Trademark Office. In view of the above remarks and amendments to the specification, it is respectfully submitted that this objection has been satisfied and should be withdrawn.

Rejection of Claims 1-3 and 5-8 under 35 USC § 102(e)

Claims 1-3 and 5-8 are rejected under 35 USC 102(e) as being anticipated by Chen (U.S. Patent No. 6,259,741) for the reasons set forth in the Office Action.

The present invention recites a process for the format conversion of an image sequence employing video data coded on the basis of a structure of pixel groups. For a coded pixel group to be converted, if the mode of coding used is of the "inter" type with no residue, the conversion is performed by a copy of a converted pixel group of a preceding image linked by the motion vector associated with the coded pixel group. Claims 7 and 8 include similar limitations.

Thus, in the present invention as claimed in claims 1, 7 and 8, instead of implementing a decoding and a conversion of all the blocks of a source image, the present claimed invention skips the conversion step for certain specific blocks. The present invention substitutes the conversion step with a "copy of a converted pixel group of a preceding image" when the blocks are coded using the "inter type with no residue" for their coding. As claimed in claim 1, the conversion, for these specific blocks is a copy of a previously (decoded and) converted block.

Chen discloses a method for converting MPEG-2, 4:2:2 profile bit streams into main profile bit streams. The Examiner cites Figure 3 as disclosing that the conversion performed in Chen is "performed by a copy of a converted pixel group of a preceding image linked by the motion vector associated with said coded pixel group" as claimed in the present invention. Applicant respectfully disagrees. Rather, Chen, in Figure 3, shows the decoding of the coded data to provide for blocks in the pixel domain which is the output of adder (330). The filter (340) of Chen is the device implementing the format conversion (see column 11, lines 65-67). The DCT function 350 and the re-quantizer (Q1) responsible for the coding of the filtered data, which, actually is the coding of the data corresponding to the converted format. The coding performed by Chen (4:2:0 bit stream) uses same motion vectors as the ones for the previous coding (4:2:2) giving the input (4:2:2) bit stream.

Therefore, in Chen, when a block which has been coded using an inter mode having no residue, the block is decoded and sent to the filter (340) which is the conversion device and upon output therefrom a new block in the spatial domain is formed. This block is coded by taking in account a filtered reconstructed block of a previous image as a prediction block and in order for this operation to be performed accurately, a residue is calculated (output of 345) and coded. The conversion performed by the system of Chen is uniformly performed on each decoded block by implementing filtering.

This is unlike the present claimed invention wherein "the conversion is performed by a copy of a converted pixel group of a preceding image linked by the motion vector associated with said coded pixel group." The use of coding modes and motion vectors used in the system disclosed by Chen are used in coding the image to the converted format and not actually used to convert the format of the image sequence as in the present invention. Coding of the image into the converted format as disclosed by Chen is not the subject of the present invention. Consequently, Chen neither

discloses nor suggests "the conversion is performed by a copy of a converted pixel group of a preceding image" as in the present claimed invention.

Therefore, Applicant respectfully submits that Chen neither discloses nor suggests that "if the mode of coding used is of the 'inter' type with no residue, the conversion is performed by a copy of a converted pixel group of a preceding image linked by the motion vector associated with said coded pixel group" as in the present claimed invention. Rather Chen discloses the use of filtering over the entire current image in order to obtain the converted image. This is wholly unlike the present claimed invention whereby "the conversion is performed by a copy of a converted pixel group of a preceding image linked by the motion vector associated with said coded pixel group".

Additionally, Chen neither discloses nor suggests in Figure 3 that there is line between the VLD device (305) and the filter device (340) to send MV and coding mode data to this filter (340). When a current block, corresponding to inter mode with residue zero, is received by the filter device, this block is filtered as the other blocks. The already filtered block of the previous image linked to this current block through the motion vector can't be identified as the filtering device doesn't receive motion vector and coding mode data and consequently cannot be copied to get a converted current block as in the present claimed invention.

Regarding claims 7 and 8, the arguments presented above regarding claim 1 are applicable to both of claims 7 and 8. Specifically, in claim 7 "the conversion is performed by a copy of converted pixel group of a preceding image linked by the motion vector associated with said coded pixel group". Claim 8 of the present invention discloses that the "pixel group for the converted image of given resolution is obtained from a group of converted pixels of the image of lower resolution". These methods of conversion are unlike the method of conversion disclosed by Chen which is performed by uniform filtering over the entire image wherein the mode of coding and

motion vectors are used in coding the converted format and not converting the format of an image sequence as in the present claimed invention.

In view of the above remarks, it is respectfully submitted that there is no 35 USC 112 enabling disclosure provided by Chen that anticipates the present invention as claimed in claims 1, 7 and 8. As claims 2-3 and 5-6 are dependent on claim 1, it is respectfully submitted that claims 2-3 and 5-6 are patentable for the same reasons discussed hereinabove with respect to claim 1. Thus, it is further respectfully submitted that this rejection has been satisfied and should be withdrawn.

Rejection of Claim 4 under 35 USC 103(a)

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (U.S. Patent No. 6,259,741) in view of Kato (U.S. Patent No. 5,701,164) for the reasons set forth in the Office Action.

Claim 4 recites, in pertinent part:

> "wherein the data are coded according to the MPEG standard, the pixel group is a macroblock and said coding mode is determined from the "skipped macroblock" or "uncoded" mode."

As discussed above regarding claim 1, Chen neither discloses nor suggests "a "process for the format conversion of an image sequence" wherein "the conversion is performed by a copy of converted pixel group of a preceding image linked by the motion vector associated with said coded pixel group" as in the present claimed invention.

Kato discloses a difference vector determination element used in an apparatus for coding motion vector includes register memories (PMV) of which number is equal to sum of maximum transmission numbers N and M of forward predictive and backward predictive motion vectors. However, similarly to Chen, Kato neither

discloses nor suggests that "the conversion is performed by a copy of converted pixel group of a preceding image linked by the motion vector associated with said coded pixel group" as in the present claimed invention.

In fact, if one were to combine the system disclosed by Chen with the system disclosed by Kato, this combination would produce a system that uniformly filters data over the entire image and codes the data that corresponds to the converted format having a difference vector determination element. However, the format conversion that is performed in the systems of Chen and Kato when taken alone or in combination neither discloses nor suggests that "the conversion is performed by a copy of converted pixel group of a preceding image linked by the motion vector associated with said coded pixel group" as in the present claimed invention. Thus, it is respectfully submitted that a system produced by combining the system disclosed by Chen with the system disclosed by Kato would not produce the system as claimed in claim 1 of the present invention and, as claim 4 is dependent on claim 1, the combination would not produce the system as claimed in claim 4 of the present invention.

In view of the above remarks, it is respectfully submitted that Kato when taken alone or in combination with Chen does not make the present invention as claimed in claim 1 unpatentable. As claim 4 is dependent on claim 1, it is respectfully submitted that claim 4 is patentable for the same reasons as discussed above with respect to claim 1. Thus, it is further respectfully submitted that this rejection has been satisfied and should be withdrawn.

Having fully addressed the Examiner's rejections, it is believed that, in view of the preceding amendments and remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the applicants' attorney at the phone number below, so that a mutually convenient date and time for a telephonic interview may be scheduled.

No fee is believed due with this response. However, should a fee be due, please charge the additional fee to Deposit Account 07-0832.

Respectfully submitted,
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November 23, 2004

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Linda Tindall